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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/079,464 | 02/22/2002 | Kanji Otsuka | 011703 | 6674 |
| 38834 | 7590 | 04/04/2005 | EXAMINER | |
| WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP 1250 CONNECTICUT AVENUE, NW SUITE 700 WASHINGTON, DC 20036 | | | JONES, STEPHEN E | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2817 | |

DATE MAILED: 04/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|------------------------------|-------------------------------|
| Office Action Summary | Application No. | Applicant(s) OTSUKA ET AL. |
| | Examiner Stephen E. Jones | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 13 January 2005.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-26 is/are pending in the application.
 4a) Of the above claim(s) 4,5,12,19-21,24 and 26 is/are withdrawn from consideration.
 5) Claim(s) 23 and 25 is/are allowed.
 6) Claim(s) 1,2,6-8,13-15 and 22 is/are rejected.
 7) Claim(s) 3,9-11 and 16-18 is/are objected to.
 8) Claim(s) 1-26 are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 22 February 2002 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 1/13/05.

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I in the reply filed on 1/13/05 is acknowledged.
2. Claims 4-5, 12, 19-21, 24, and 26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 1/13/05.

Drawings

3. Figures 1A, 1B, 2A, 2B, 3A, 3B, 4A, and 4B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 6 and 7 are objected to because of the following informalities:

Regarding Claim 6, it appears that the phrase "insulators 9" should read as --insulators (9)-- or --insulators--.

Regarding Claim 7, it appears that the phrase "insulators each formed to cover respective terminal resistor" should read as --insulators each formed to cover a respective terminal resistor-- to improve the grammatical form.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 22 is rejected under 35 U.S.C. 102(e) as being anticipated by Sochoux.

Sochoux teaches a printed circuit board having a termination for a clock transmission line (i.e. digital bus) including a terminal resistor and a ferrite magnetic material (i.e. an insulator) in the vicinity of the resistor, and the ferrite reduces EMI (i.e. it absorbs high frequency electromagnetic energy). Also, the ferrite can be doped with a less conductive material (i.e. mixed with an insulative material) (e.g. see Col. 5, lines 16-24).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuka et al. (JP 2000174505) in view of Sochoux.

Otsuka teaches a terminated bus including the identical transmission line structure as claimed (e.g. see Figs. 3 and 9).

However, Otsuka does not teach that the terminal resistor is provided with an insulator (i.e. regions of the substrate) having a larger dielectric loss angle than the substrate that is adapted to absorb high frequencies (Claim 1), that the resistor is a chip, or that the transmission lines are multiple pairs each having a termination (Claims 13-14).

Sochoux teaches a resistive termination as described above and also teaches that the termination can be formed as a package (i.e. a chip) (e.g. see the abstract).

It would have been considered obvious to one of ordinary skill in the art to have substituted terminations such as taught by Sochoux in place of the generic terminations in the Otsuka device, because it would have been a substitution of well-known art-recognized equivalent termination means providing the advantageous benefit of improved EMI control such as suggested by Sochoux, thereby suggesting the obviousness of such a modification.

Also, it would have been considered obvious to one of ordinary skill in the art to have included multiple pairs of terminated lines in the combination of Otsuka and Sochoux, because it would have provided the advantageous benefit of multiple transmission lines for communications between multiple sources and multiple loads as desired by the user.

Furthermore, since Sochoux is silent as to the particular ferrite material and especially since the ferrite is for absorbing EMI, one of ordinary skill in the art would have been motivated to select the absorbing ferrite material to have a higher loss factor than the substrate so as to provide the advantageous benefit of EMI reduction in addition to the substrate material. Also, note that substrate materials are commonly made of low loss materials such as alumina (i.e. much lower than ferrites).

10. Claims 1-2, 6-8, and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuka et al. (JP 2000174505) in view of Fukaya.

Otsuka teaches a terminated bus as described above.

However, Otsuka does not teach the terminal resistor is provided with an insulator (i.e. regions of the substrate) having a larger dielectric loss angle than the substrate that is adapted to absorb high frequencies (Claim 1), that the insulator includes glass and modified ionized additive (Claim 2), that the resistor is a chip, that the transmission lines are multiple pairs each having a termination (Claims 13-14), that the insulator covers the resistor (claims 6-7), or that the insulator is a mixture of glass, resin and ionized additive (Claims 8, 15).

Fukaya teaches a chip resistor having a glass coating (i.e. an insulator). The coating can be CaO (i.e. an ionized additive like applicant's disclosure) mixed with an organic vehicle ethyl-cellulose (i.e. a resin) (e.g. see Col. 6, lines 1-8 and Table 2).

It would have been considered obvious to one of ordinary skill in the art to have substituted resistors such as taught by Fukaya in place of the generic termination resistors in the Otsuka device, because it would have been a substitution of well-known art-recognized equivalent resistor means providing the advantageous benefit of excellent weather resistance and stability (see abstract of Fukaya), thereby suggesting the obviousness of such a modification.

Also, it would have been considered obvious to one of ordinary skill in the art to have included multiple pairs of terminated lines in the combination of Otsuka and Fukaya, because it would have provided the advantageous benefit of multiple transmission lines for communications between multiple sources and multiple loads as desired by the user.

Furthermore, one of ordinary skill in the art would have been motivated to select the coating material to have a higher loss factor than the substrate, especially since substrate materials and circuit boards are commonly made of low loss materials such as alumina (i.e. much lower than ferrites), and the coating material of Fukaya is the same as Applicant's disclosure. Also, as an obvious consequence of the substitution, the coating would absorb high frequency electromagnetic energy.

Allowable Subject Matter

11. Claims 3, 9-11, and 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
12. Claims 23 and 25 are allowed.
13. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not teach the claimed invention including that the insulators formed to cover the terminal resistors are made of a mixture of a magnetic material and an organic resin (Claim 23), or that the insulative members are formed at predetermined regions and made of a mixture of a magnetic material and an organic resin (Claim 25).

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Watanabe et al. teaches that ethyl-cellulose is an organic resin (e.g. see Col. 1, lines 37-42).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen E. Jones whose telephone number is 571-272-1762. The examiner can normally be reached on Monday through Friday from 8 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on 571-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



STEPHEN E. JONES
PRIMARY EXAMINER

SEJ